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ABSTRACT

A study was conducted to determine what factors of human resource development (HRD) or other learning interventions impede or enhance improved performance. A review of the literature suggested theories of HRD effectiveness, where HRD effectiveness is perceived as the extent to which HRD goals and objectives are achieved. Various authors state that the outputs of HRD can be measured at several levels, such as learning, behavior, and results. The research also suggests that HRD must be aligned with strategic planning--although this may result in a top-down approach that will limit commitment from employees. A number of contextual characteristics exerting influence on HRD are noted, since the environment of the company influences the effectiveness of HRD. The study is based on data derived from a survey of 44 Dutch companies with more than 500 employees each. The data were collected in 1997, using four questionnaires sent to 767 representatives of the companies (44 HRD representatives, 357 HRD participants, 242 supervising managers, and 124 of the HRD participants' subordinates). Response rates ranged from 100 percent to 29 percent, depending on the category of participant. The study concluded that strategic HRD alignment has an impact on HRD effectiveness, but that factors such as problem situation, HRD climate, position of HRD department, and form of HRD intervention may have such impact only through their effect on Organization process. (Contains 29 references.) (KC)

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What works in enhancing HRD effectiveness?

Introduction

HRD effectiveness is apparant from the effects of HRD programmes and other learning interventions. However, in literature is estimated that only between 10 and 20 percent of capital invested in HRD and other learning interventions will lead to enduring performance improvement (Baldwin & Ford, 1988; Latham & Crandall, 1991; Broad & Newstrom, 1992; Kessels, 1996). It is therefore important to prevent these dissatisfying results. The research question is then: what factors impede or enhance the achieving of improved performance? Before answering this, it will be argued that this research fits within the performance paradigm of HRD and theory of HRD effectiveness, and within the multilevel theory.

Multilevel performance and effectiveness of HRD

The research question fits within the performance paradigm of HRD. According to Weinberger (1998) the performance paradigm of HRD holds that the purpose of HRD is to advance the mission of the organizational system. HRD efforts have to improve the capabilities of individual working in the organization and improving the organizational systems in which they perform their work. The primary outcome of HRD in this context is not just learning, but also performance at various levels (Holton, 2000).

Kaplan and Norton (1996) suggest two categories of performance measures: the so-called drivers and outcomes. Outcomes measure the effectiveness or efficiency relative to core outputs of the system, sub-system, process or individual, whereas drivers measure elements of performance that are expected to sustain or increase system, sub-system, process, or individual ability and capacity to be unique for particular performance systems (Holton, 2000). Together, these drivers and outcomes describe the cause and effect relationships in organizations (Kaplan & Norton, 1996), which implies that drivers should predict future outcomes.

Their theory fits well into the theory of HRD effectiveness, where HRD effectiveness is conceived as the extent to which HRD goals and objectives are achieved. (Wognum, 1999). Following the school-effectiveness theory (Scheerens & Bosker, 1997) this theory points as well to a means-goals ordening between the ultimate criteria and the supportive, effectiveness enhancing criteria. The HRD effects can then be seen as ultimate criteria of HRD effectiveness, like Kaplan and Norton's output measures. Criteria, such as the HRD process itself, resource acquisition, adaptability to the environment, or the ability, satisfaction and motivation of emplyees, are seen as effectiveness enhancing criteria (Scheerens & Bosker, 1997; Wognum, 1999), just like Kaplan and Norton's performance drivers.

Various authors state that the outputs of HRD can be measured at several levels. In general, these are the learning (effects on knowledge, skills and attitudes), behavior (effects on working behavior of individual employees), and results levels (effects on the performance results of individuals, groups, departments or the company). These multi-leveled outcomes fit within the multi-level theorie, which, according to Klein, Tosi & Cannella (1999) integrates the micro domain's focus on individuals and groups with the

macrodomain's focus on organizations, environment and strategy. This will results in a better understanding of the influence of individuals on the organization and, vice versa, the organizational influence on individuals' actions and perceptions. Following this multi-level approach, it may become clear that the context of a specific organization will have an impact on the achieving of HRD performance or effectiveness. It is often assumed that there is a close link between characteristics of this context and the way in which organizational processes evolve. Deviating from an appropriate model, contingency theorists maintain, creates a lower degree of organizational effectiveness (Khandwalla, 1977; Van de Ven & Drazin, 1985). From this perspective, the only way to assess the effectiveness of HRD interventions is to include the interaction with key components of the organizational system (Hannigan, Donovan, Holton c.s., 2000). HRD interventions will probably be less effective if HRD structures and processes do not match their contextual conditions.

Factors impeding or enhancing HRD effectiveness

Strategic HRD Aligning

Following the theories described in the former section, evaluating alternative areas is necessary, as a means of interpreting the effects of HRD activities. This is also supported by Hannigan c.s. (2000), when they state that new research is needed that takes a more exploratory look at the decision and influence process that managers use to make decisions about training. This HRD decision-making process can be seen as congruent to strategic planning for HRD or HRD policymaking and strategy formation. In all these processes systematically considered decisions are made on actions and resources to accompish HRD goals, within certain environmental circumstances. In organizational effectiveness thinking, goals can be seen as the major defining characteristics of the effectiveness concept itself and have to be shared among the members of the organizations.(Scheerens & Bosker, 1997).

Mintzberg states, that strategic planning cannot be synonymous with strategy formation and certainly not with effectiveness in that process (Mintzberg, 1994, p.29). Strategy formation in his view encompasses the meaning of strategy as a plan based on a certain intended and/or emergent pattern, while strategic planning refers to a more inflexible, rational and formalized procedure, following a sequential, linear and hierarchical order, mainly top-down. This is probably based on a more traditional view on strategic planning, holding in general the idea that strategic plans have been developed by a planning staff at top management level. This view has some shortcomings. It can destroy commitment, narrow a company's vision, discourage change, and breed an atmosphere of politics. This especially becomes clear amid more dynamic external and more complex internal environments (Rothwell & Kazenas, 1994). Several authors, including Mintzberg (1994) and Galagan (1997), distance themselves from the traditional approach maintaining that what is needed for all those involved, within and outside the organisation, is to participate in this process in order to create commitment among employees and to achieve a successful implementation of policy. Strategic planning then implies that an organization have to pay attention to all relevant stakeholders when

developing organizational goals and means to reach these goals within certain environmental circumstances.

A more recent view on strategic planning for HRD, which includes the participation of all relevant stakeholders, runs as follows: Strategic HRD planning - or strategic HRD aligning - is a dynamic and interactive process in which, as part of an ongoing and future company policy, HRD goals and objectives are formulated concerning employees'and company development using targeted learning processes of improvement and innovation (Wognum, 1999). The word 'strategic' emphasises the company perspective and connects the link between HRD and the organisational goals and objectives. According to the more traditional view, policymaking or planning processes are typically sequential, linear and mainly top-down. Less traditional strategic planning deviate from this, implying that goals and objectives are drawn up according to sufficient information and in consultation with all those involved. Based on rational policymaking models and on features of decision-making models, the process of strategic HRD aligning is characterized by four aspects: participation, information, formalization, and decision-making. *Participation* means the involvement of participants at the various organization levels in the aligning process. *Information* refers to the data needed to gain more insight in those company's situations which may call for HRD interventions. *Formalization* refers to the more or less formal consultative structures and information gathering procedures in the aligning process. *Decision-making* is concerned with the strategic choices of the aligning process, mainly the choice for HRD goals and objectives the HRD programmes are intended to. By paying attention to these four aspects HRD aligning will enhance HRD effectiveness.

Contextual factors

Literature indicates a number of contextual characteristics exerting influence on organizational effectiveness. Considering the HRD perspective, those characteristics refer to the HRD function, which is usually shaped into an HRD department, and the organizational context in which the function is embedded (Mintzberg, 1983; Tjepkema & Wognum, 1999). This environment can be divided into two parts: the company in which the HRD function is embedded, and the company's external environment the so-called macro-environment. Macro-environment characteristics will be reflected in the kind of problems or developments with which the company is faced. Such problems serve as starting points for HRD interventions Therefore, macro-environment characteristics are not a direct object of study but act more indirectly by considering the problem that serves as a starting point for HRD interventions. This problem can be conceived as a characteristic of the company.

The size and structure of the company, its HRD climate, the economic sector the company belongs to, and the degree of company's innovation are company characteristics that, according to literature (among others: Wognum, 1998; Mulder, Akkerman & Bentvelsen, 1989; Wexley and Latham, 1991; Useem, 1993), are supposed to have an impact on HRD effectiveness. The structure and position of the HRD department, the degree of innovation, and the form the HRD program takes, and also tranfer conditions are characteristics of the HRD function expected to influence HRD effectiveness (e.g. London, 1989; Mintzberg, 1983; Thijssen & Den Ouden, 1993).

The connection between all these elements and HRD effectiveness is visualized in the research model depicted in Figure 1.

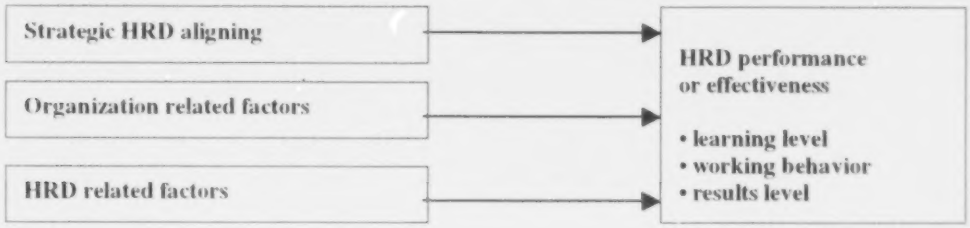

Figure 1: Research Model

Method

This paper is based on data derived from a survey among Dutch companies. These companies were selected from a national database from the Association of Chambers of Commerce.

Sample. Two company related contextual factors were used as selection criteria: the size of the company, and the economic sector to which the company belongs. Following these criteria, 44 companies with more than 500 employees were selected from the aforementioned database: 11 from the industrial sector and 33 from the financial and commercial services sector. A non-response analysis showed no significant differences between the non-response group and the 44 companies in the study, concerning such contextual variables as size and structure of the company and structure and position of the HRD function. In each company one HRD program was selected (from the two frequently recurring fields of automation and social skills). This resulted in 23 selecting automation and 21 social skills programs. In order to define the effectiveness of the selected HRD programs, four categories of respondents within the company were selected: the HRD company representative, a maximum of 15 HRD participants, their supervising manager and (if present) their subordinates. All groups can be considered as having an interest in the results of the HRD programs (so-called stakeholders).

Data collection. Data were collected in 1997, using four comparable questionnaires sent to 767 representatives of the four groups of stakeholders (44 HRD company representatives, 357 HRD participants, 242 of their supervising managers, and 124 of their subordinates). The questionnaires were designed to collect information on variables derived from the aforementioned theoretical framework. They comprised groups of questions and statements. Statements focused on respondents' opinions on the strategic HRD aligning process (22 in total: five on participation, five on information, five on the formal nature, and seven on the decision-making process) and perceived effectiveness (9 statements). In order to compare the effects of the 44 HRD programmes, the effectiveness as perceived by respondents was the object of study in stead of the real effectiveness. This is based on the assumption that the importance given to effectiveness later is every

bit as important as actual HRD effectiveness (Ford & Noe, 1987). Emphasis on perceptions is also allowed by the formerly mentioned multilevel theory, because the use of this theory will also results in a better understanding of the organizational influence on individuals' actions and perceptions (Klein, Tosi & Cannella, 1999). Statements had answers on a 5-point scale, running from 1 (totally disagree/not al all) to 5 (totally agree, completely) and a possible 6 score (for unknown, no idea, or not relevant).

Additional questions in the questionnaire for HRD company representatives concerned the company itself and HRD related factors. These included questions on the kind of problem that was a starting point for HRD (divided into three categories: to resolve a problem concerning employee, department or company performance; to improve certain working practices; or to change or renew the company situation), on the structure of the company and HRD function, on important innovations occurring since 1990 within the company as well as in the HRD function, on the design of the selected program, and on conditions made for transferring of the learning results into working practice. The questions had both pre-coded and open answers. Twelve statements focused on company HRD climate and comprised, among others, statements on a respondent' s perception of management attitude towards training. These statements also had answers on a five-point scale.

Response. For the automation response group 752 questionnaires were sent out (to 23 HRD company representatives, 320 trainees, 277 managers, 132 subordinates). For the 'social skills' group 740 questionnaires were sent out (to 21 HRD company representatives, 292 trainees, 251 managers, 176 subordinates). For both groups, all HRD company representatives filled in the questionnaire. The response rates for the other groups of respondents are for the 'social skills'group: 63% of the trainees, 49% managers, and 49% subordinates, and for the group of companies with automation programmes: 54% of the trainees, 43% of the managers, and 29% of the subordinates.

Analysis. To arrive at answers to the research questions descriptive statistics, cross-tabulations, chi-square analysis and one-way analysis of variance were used for the analysis of the data. A factor analysis was used to assess the construct validity of the scales. As a consequence of multilevel theory as described in a former section, and of the two-stage sampling design (first a sample of companies, then a sample of respondents within each company, which resulted in a hierarchical, nested datastructure) multilevel statistical models are used for the data analysis (cf. Bryk & Raudenbush, 1992; Goldstein, Rasbach, Plewis, et all, 1998) . These models allow us to make statistical inferences both at individual respondent (sample size 767) and company (sample size 44) levels.

Results

The study was intended to provide insight into which factors impede or enhance the achieving of improved performance.

The impact of strategic HRD Aligning on HRD effectiveness. In order to study the impact of strategic HRD aligning on HRD effectiveness two scales were constructed,

'perceived strategic HRD aligning' and 'perceived HRD effectiveness'. A factor-analysis was used for the 22 items of strategic aligning to assess its construct validity. Instead of the expected four factors, six emerged from the analysis with varimax rotation covering all aspects of strategic aligning. A one-factor analysis was then performed to find out whether the construct of strategic aligning was one-dimensional instead of multidimensional. Five items with factor loading below .40 and with item-rest correlations below .30 were dropped for further analysis. Reliability of the remaining 17 items of the opinion scale 'perceived quality of strategic HRD aligning' led to an alpha of .89. Analysis of the item content proved that all four aspects of strategic HRD aligning were represented in the constructed scale. This result justifies the conclusion that the four aspects are significant in connection. Also an opinion scale was constructed on the basis of nine items related to perceived HRD effectiveness at all three levels of HRD effects. The psychometric quality of this scale was studied with a one-factor analysis and with Cronbach's alpha. The scale proved to be reliable. No items were excluded and α=.89.

Before analysing the impact of strategic HRD aligning on HRD effectiveness, the representativeness of the strategic aligning scale has to be considered, because this scale is based on 17 items and 543 valid cases; 224 cases were not included due to a high level of item non-response. Analysis showed that the results based on 543 cases are representative. Respondents whose opinion on the strategic aligning process is included in the analysis do not differ significantly in their opinion on HRD effectiveness (M=3.52, SD=.70) from those who are excluded in the strategic aligning scale (M=3.54, SD=.71) (t=.24, df=537, p>.05).

Following the multilevel analyse strategy, as outlined above, model 0 was first constructed (see Table 1). This step was important to decide how much variance is explained by differences within and between companies and to find which variables account for this variance and to what extent. The results under model 0 indicate that the average perceived effectiveness score (the intercept) was 3.52, with a total variance of .49 (.097 + .393), of which 20% ((.097/.49)*100%) is variation between companies and 80% is variation between respondents within companies. The results under model 1 (Table 1) indicate that supervising managers, subordinates and HRD company representatives estimate higher effects than HRD participants do. Supervising managers perceive HRD effectiveness .11 higher than HRD participants do; subordinates .06; and HRD representatives .25. These differences are significant for managers and HRD company representatives. One percent of the variance in perceived effectiveness is explained by the groups of respondents. This is not a significant model improvement (p>.05).

The company score for stakeholders' opinion on strategic HRD aligning was constructed by first computing the mean of the deviation scores of each group of respondents and then calculating the mean of these four group scores. The results are presented in model 2 of Table 1. The data show that stakeholders' opinion on strategic HRD aligning within companies has a significant effect of .49 on perceived HRD effectiveness. The between companies effect of this so-called aligning perception is .47 (also significant at the .10 level one-tailed). The strategic aligning perception accounts for 22% of the variation in effectiveness scores (1-(.075+.304)/(.094+.389)*100%). The difference in deviation between model 1 and model 2a is 108.519 (884.932-776.413), with two degrees of freedom. This χ^2 analysis indicates a significant difference (p=.00).

This proved stakeholders' perception on strategic HRD aligning is an important predictor of perceived HRD effectiveness. The perceived effectiveness is even extra positive, as the mean company score on perceived HRD aligning is higher.

The problem of cognitive dissonance. It is conceivable that respondents may have avoided cognitive dissonance (Etgen & Rosen, 1993; Festinger & Aronson, 1997), meaning that it is not very likely they will rate a course as effective while at the same time rating the strategic aligning process as poor. Multilevel statistical models are used to handle this problem. If avoiding cognitive dissonance affects the estimate of the association between stakeholders' opinion on strategic HRD aligning and effectiveness, this relates to the within-regression coefficient, but not the degree the between-company regression coefficient exceeds this within-company regression coefficient. There is no psychological explanation for a possible extra effect of the company mean for strategic aligning on perceived HRD effectiveness over and above the individual effects. For the individual level effect, the psychological explanation of avoiding cognitive dissonance may hold, but not for the so-called contextual effect. However, a study concerning the possible presence of cognitive dissonance has to start from company scores which are computed from the scores of individual respondents, regardless to which group they belong, instead of the mean scores of the four respondent groups, as was clarified before

Table 1: *Effects (and standard errors) of strategic aligning on (perceived) HRD effectiveness (with respondent group of HRD participants as contrast group) (number of respondents = 440; number of companies = 44)*

	model 0		**model 1**		**model 2a**	
Intercept	3.52	(.06)	3.46	(.06)	1.83	(.16)
supervising managers			.11	(.07)*	-.05	(.06)
Subordinates			.06	(.12)	.14	(.11)
HRD company representatives			.25	(.13)*	-.03	(.12)
aligning perception within companies					.49	(.05)**
aligning perception between companies					.47	(.19)**
unexplained variance						
between companies	.097	(.03)	.094	(.03)	.075	(.02)
within companies	.393	(.03)	.389	(.03)	.304	(.02)
explained variance (R^2)			1%		22%	
Deviance	890.204		884.932		776.413	
degrees of freedom (df)			3		2	
model improvement (p) (to model)			15 (0)		.00 (1)	

*) significant at $\alpha<.10$ (two-tailed)

**) significant at $\alpha<.10$ (one-tailed)

The results of this computing procedure show that stakeholders' opinion on strategic HRD aligning has an effect of .49 on perceived effectiveness within companies and that for the between effect the opinion on strategic HRD aligning is .63, which is considerably higher than .49. This extra effect may not only be explained by avoiding cognitive

dissonance, but must also be ascribed to the strategic HRD aligning process within companies (see Wognum & Lam, 2000).

The impact of organization and HRD related factors on HRD Effectiveness. For exploring the impact of organization and HRD related factors, the variables size and structure of the company, degree of innovation of the company, structure and position of the HRD department, degree of innovation of the HRD department, design of HRD programs, conditions made for the transfer of learning results, and company HRD climate are separately brought into Model 2 (see Wognum, 2000). The variable economic sector only served as a selection criterium. It was not brought into the analysis since no significant effect on perceived HRD effectiveness was found concerning this characteristic (Wognum, 1999). For the factors size and structure of the organization, structure of the HRD function, and transfer conditions, no differences in perceived HRD effectiveness were observed. A link was found, however, between the following organization and HRD related factors and perceived HRD effectiveness.

- Problem that served as starting Point for HRD.
In interaction with the type of HRD program (automation or social skills) the problem that served as starting point for HRD proved to have a positive effect on perceived HRD effectiveness. If the actual performance of employees, departments or the entire company is starting point for HRD interventions, then the impact on perceived HRD effectiveness was significant lower for social skills programs then for automation programs. It was found that the problem that served as starting point for HRD has no significant effect on perceived HRD effectiveness in itself.

- HRD Climate and Position of the HRD Department
It proved that HRD climate correlates negatively with HRD effectiveness. No interaction effects were found between HRD climate and type of HRD program, indicating that the effect of HRD climate on perceived effectiveness is negative, regardless whether it concerns automation or social skills programs.

The same applies to the position of the HRD department when this is not placed in the management line, but is part of a staff department, for instance, the company's personnel department. The effect on perceived HRD effectiveness is significant lower where the HRD department is part of a staff department, than when it has 'other position than a staff department', which is significant. No interaction effect between 'position of the HRD department' and 'type of HRD program' were found, implying that the perceived HRD effectiveness score in companies with an HRD department as part of a staff department is significantly lower than in companies with an HRD department positioned as other than a staff department, no matter if it concerns automation or social skills programs.

- The Form the HRD Program takes
More than 56% of the 44 HRD programs studied were tailor-made, 25% were standard, while about 18% had another form, usually an adaptation of a standard program to a specific company situation. The form of the HRD program proved to correlate negatively

with perceived HRD effectiveness. When compared to standard and other kind of 'off-the-shelf' programs, tailor-made or customized programs result in a significant lower level of effectiveness. No significant effects were found when interacting the variable 'form of HRD program' with the variable 'type of HRD program'. This means that the perceived effectiveness of tailor-made programs are less than other program forms, irrespective of whether they are geared to automation or social skills.

Conclusion

Based on the results it may be concluded that many factors proved to have an impact on HRD effectiveness. One of the findings showed that Strategic HRD Aligning is positively correlated with HRD effectiveness. This may lead to the conclusion that the strategic HRD aligning or decisionmaking process is an important intermediate factor in enhancing (or impeding) the impact of HRD on company performances. Also some environmental elements, like HRD climate, position of the HRD function and the form of the HRD program, turned out to be important effectiveness influencing factors.

It is now possible to start the building of a model for HRD performance or HRD effectiveness, and visualize the connection between all elements. This can be done in several ways (see for instance Rossi & Freeman, 1993); Van Dellen, 1994; Bergenhenegouwen & Voorthuis, 1995; Holton, 1996). Based on the aforementioned theories and research findings, here the choice is made for an HRD effectiveness model derived from the integrated, multilevel model of school effectiveness, which is based on a review of instructional and school effectiveness literature (Scheerens & Bosker, 1997). Following this model and based on the information in the former sections, the main characteristics of the HRD effectiveness model (see Figure 2) are as follows:

- According to a basic systems model of an organizationally and contextually embedded production process, the antecedent conditions are classified in terms of inputs, processes and contexts of HRD;
- The model has a multilevel structure, where HRD function is embedded in organizations (strategic HRD aligning process), and individual employees who want to develop themselves are embedded in the HRD function (HRD process)

In the study depicted here some empirical indications were found for certain relations in this model. The findings give some insights into ways to improve the effectiveness of HRD programs and other learning interventions. Much more research is needed, however, to discover more predictors of HRD effectiveness so that the effectiveness model can then be fleshed out and provide us with an adequate explanation for the effectiveness of company HRD programmes. Further research also needs to focus on the aligning processes in less traditional training situations. Due to the recent trend for less traditional and more informal HRD interventions than the ones mentioned in this survey, research is needed into the way the aligning process in more informal and on-the-job training and learning situations can be approached.

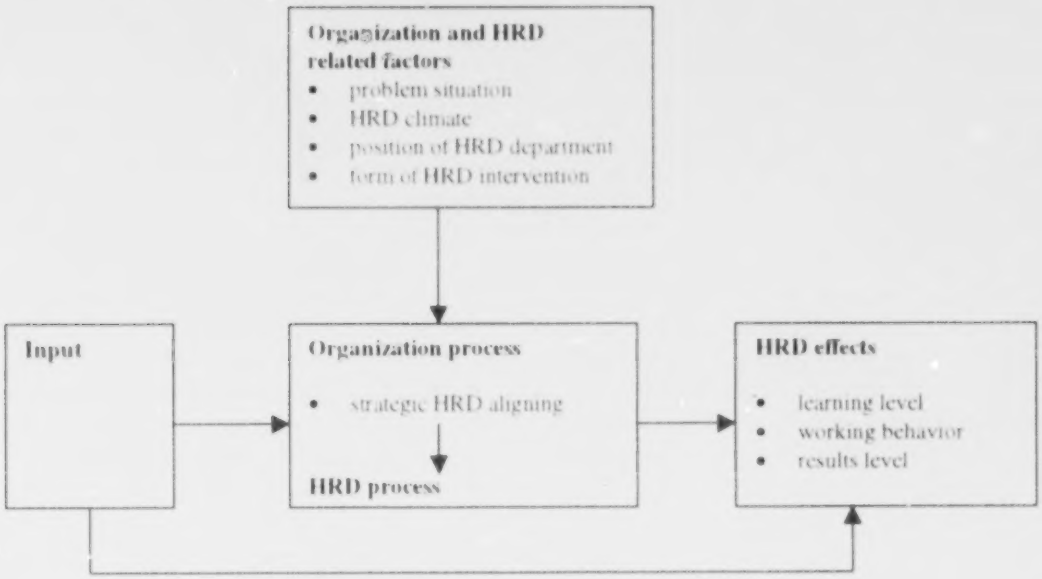

Figure 2: A model of HRD Effectiveness

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